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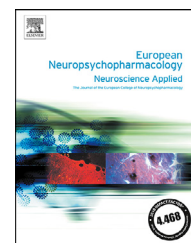
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REVIEW

European college of neuropsychopharmacology network on the prevention of mental disorders and mental health promotion (ECNP PMD-MHP)



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Abstract

Prevention is the most promising way to reduce the high personal, familial, societal, clinical and economic costs of mental disorders in Europe and worldwide. A complementary approach is to go beyond the prevention of mental ill health, to promote good mental health. This manuscript highlights the first European consortium fostering cutting-edge multidisciplinary research in these two areas. The ECNP-funded Network on the Prevention of Mental Disorders and Mental Health Promotion (ECNP PMD-MHP) brings together European sites of excellence with different expertise for translational research collaboration, including partnerships with the industry. The ECNP PMD-MHP Network adopts a transdiagnostic, lifespan, clinical staging model which cuts across different mental disorders and different methodologies. The main aims of the ECNP PMD-MHP Network are to facilitate multidisciplinary collaboration, enhance knowledge and data sharing, standardise core assessment and outcome measures, promote clinical research, apply for grant funding, and generate research reports. By supporting collaborative research, the

ECNP PMD-MHP Network will be vital for fostering European psychiatry in the field of prevention of mental disorders and promotion of good mental health.

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1. Introduction

A major barrier to improving outcomes of mental disorders is that after the onset of the disorder has occurred, there are limited treatment possibilities and even fewer options to alter the illness course (Millan et al., 2016). Thus, prevention is the most promising way to reduce the high personal, familial, societal, clinical and economic costs of mental disorders in Europe and worldwide (Fusar-Poli et al., 2017a). The most validated preventive paradigm has focused on *indicated primary prevention* (Table 1) (Arango et al., 2018) in individuals presenting with subtle signs and symptoms, such as those at clinical high-risk for psychosis (Fusar-Poli, 2017, 2018; Fusar-Poli et al., 2013a) or those at risk for bipolar disorders (Bechdolf et al., 2014; Correll et al., 2014; Fusar-Poli et al., 2018; Leopold et al., 2012; Pfennig et al., 2014a,

2014b; Scott et al., 2017), depression (Loechner et al., 2018; Morrell et al., 2016; Rachid, 2018), or anxiety disorders (Moreno-Peral et al., 2017). Complementary emerging approaches include *selective primary prevention*, targeting asymptomatic individuals with specific risk factors for mental disorders, and *universal primary prevention*, which can be applied at scale in the general population (Berk et al., 2017; Radua et al., 2018). Primary prevention interventions seek to lower the incidence of mental disorders and are embedded in a clinical staging (Berk et al., 2017; Radua et al., 2018) and transdiagnostic (Fusar-Poli et al., 2017b) model and are applied across the life span, encompassing the prenatal period, post-natal development, childhood, adolescence, early and late adulthood (Berk et al., 2017; Morrell et al., 2016; Radua et al., 2018). Secondary prevention seeks to lower the prevalence of mental

Table 1 Classification of preventive approaches in psychiatry integrates the classic public health classification with Gordon's classification of physical illness (WHO, 2004). Gordon's universal, selective and indicated preventive interventions are included within primary prevention in the public health classification [(WHO, 2004), page 17].

Classic public health classification of prevention	Gordon's classification of prevention of physical illness (Gordon, 1983)
<p>Primary prevention seeks to prevent the onset (incidence) of a disorder or illness [(WHO, 2004), page 17, Box 2]</p>	<p>Universal prevention is defined as those interventions that are targeted at the general public or to a whole population group that has not been identified on the basis of increased risk: targeted at the general public [(WHO, 2004), page 17, Box 3].</p> <p>Selective prevention targets individuals or subgroups of the population whose risk of developing a mental disorder is significantly higher than average, as evidenced by biological, psychological or social risk factors [(WHO, 2004), page 17, Box 3].</p> <p>Indicated prevention targets high-risk people who are identified as having minimal but detectable signs or symptoms foreshadowing mental disorder or biological markers indicating predisposition for mental disorder but who do not meet diagnostic criteria for disorder at that time [(WHO, 2004), page 17, Box 3].</p>
<p>Secondary prevention seeks to lower the rate of established cases of the disorder or illness in the population (prevalence) through early detection and treatment of diagnosable diseases [(WHO, 2004), page 17]</p> <p>Tertiary prevention includes interventions that reduce disability, enhance rehabilitation and prevent relapses and recurrences of the illness [(WHO, 2004), page 17]</p>	
<p>Mental disorder prevention aims at reducing incidence, prevalence, recurrence of mental disorders, the time spent with symptoms, or the risk condition for a mental illness, preventing or delaying recurrences and also decreasing the impact of illness in the affected person, their families and the society (Institute of Medicine, 1994)</p>	

disorders while tertiary prevention seeks to reduce relapses, disability and chronicity: these strategies can further be employed in later adulthood to improve outcomes of psychiatric disorders (Berk et al., 2017; Radua et al., 2018). Over the past decade, several European research sites have produced accumulating evidence in this field, generating an unexploited collaborative potential to foster breakthrough disease-modifying preventive research (Millan et al., 2016). Barriers to multidisciplinary collaboration, knowledge and data sharing, standardisation of core assessment and outcome measures and collaborative grant funding applications limit the current impact of European research in this field.

A parallel line of evidence has clearly shown that effective interventions in this area should not only prevent mental ill-health, but also promote good mental health (Sharma et al., 2017). While there is an undoubtable degree of overlap between prevention of mental disorders and mental health promotion, the latter has remained on the margins in Europe, mostly because of heterogeneous assessment and outcome measures and the lack of robustly validated interventional frameworks for clinical practice (Saxena et al., 2006).

This manuscript presents the first European research consortium which has been established to tackle the above-mentioned limitations of knowledge, and foster research for the prevention of mental disorders and promotion of good mental health.

2. Experimental procedures

This manuscript originates from a reflective workshop on the progress, challenges and future directions of the prevention of mental disorders and promotion of mental health, which was held on the October 7, 2018, at the 31st Congress of the European College of NeuroPsychopharmacology (ECNP) in Barcelona. Principal investigators from a variety of European clinical academic centres that are active in the field of prevention of mental disorders and promotion of mental health were invited to join a new ECNP Thematic Working Group on the Prevention of Mental Disorders and Mental Health Promotion (ECNP PMD-MHP). Over the subsequent year the group has received official approval and funding as full ECNP Network. During the workshop, participants also refined the Terms of Reference for the ECNP PMD-MHP Network. The current manuscript summarises the core results of this workshop, reviewing the ECNP Network structure, aims of the ECNP PMD-MHP Network, participating centres with scientific track record, industry collaborations and planned activities. The articles included in this targeted review were not selected on a systematic basis, and there is no assumption that the evidence discussed is exhaustive.

3. Results

3.1. ECNP network taskforce

ECNP Networks are scientific multi-disciplinary pan-European platforms that bring together researchers with different expertise for translational research collaborations

in the ECNP community (see Section 3.3). ECNP Networks are established to facilitate the collection of essential data in a harmonised way and can focus on specific brain disorders or methodologies, flexibly supporting novel and targeted collaborations across other existing ECNP Networks. Usually, ECNP Networks and Thematic Working Groups are instigated by specific research calls or promising initiatives. The ECNP Networks are guided by the Networks Board, while each Network is led by a chair and a co-chair. Chairs and co-chairs of the Networks form the ECNP Network Taskforce.

3.2. Aims of the ECNP PMD-MHP Network

Overarching aims of the ECNP Network Taskforce include fostering collaboration and gathering of experts on a specific topic, organising and promoting several Network meetings, providing administrative support, facilitating dialogue with stakeholders, supporting grant applications, and disseminating the results of funded projects.

The ECNP PMD-MHP Network was created in response to several European funding initiatives in the field of prevention of mental disorders or mental health promotion. For examples, this initiative aligns with the European Commission's ROAMER (A Roadmap for Mental Health Research in Europe). The ECNP PMD-MHP Network adopts a transdiagnostic (Fusar-Poli et al., 2019), lifespan approach to facilitate its broader integration with the other existing ECNP Networks that focus on specific brain disorders.

The ECNP PMD-MHP Network is highly multidisciplinary, including basic researchers, psychiatrists, psychologists and neuroscientists. Further multidisciplinary collaborations have been established with industry companies (see Section 3.4). The European sites included in the ECNP PMD-MHP Network are centres of excellence in the prevention of mental disorders and promotion of good mental health, and are part of this TWG with the following shared goals:

1. Facilitate multidisciplinary collaboration, knowledge and data sharing building on existing ECNP Networks to support innovative translational research, from basic to clinical and public health research, for the benefit of patients, focusing on the transdiagnostic disease-modifying prevention of mental disorders.
2. Standardise core assessment, outcome measures and interventional research strategies for the promotion of mental health in Europe.
3. Promote clinical research partnerships across disciplines and sectors, including public-private partnerships, in particular with the pharmaceutical firms, charities and the public.
4. Apply for European grant funding and produce research reports to disseminate the findings of the PMD-TWG Network via international journals.

3.3. Core participating centres and scientific expertise

The ECNP PMD-MHP Network is composed of core institutions with an outstanding track record in the field of prevention of mental disorders or mental health promotion. The ECNP PMD-MHP Network is co-chaired by PFP and CA.

1. Department of Psychosis Studies, Institute of Psychiatry, Psychology and Neuroscience (IoPPN), King's College London, London, UK. Members: PFP and PM.
The Department of Psychosis Studies has conducted pioneering work in the field of prevention of mental disorders resulting in over 1300 scientific publications, with a current £25 million in research grant income, with a specific focus on the development of new treatments for early psychosis. It hosts one of the oldest and largest clinical services for patients at risk of psychosis in Europe (Outreach and Support In South-London, OASIS [Fusar-Poli et al., 2013b](#)). This service is providing early detection, prognostic assessment and preventive treatment for individuals aged 14-25 who are at risk of developing psychosis, covering a catchment area of about 1.4 million Londoners ([Fusar-Poli et al., 2015](#)). This Department is currently investigating experimental psychopharmacological treatments for psychosis prevention, such as intranasal oxytocin, potassium channel modulators, phosphodiesterase inhibitors and cannabinoid antagonists or modulators, in combination with precision and stratification medicine. This Department has long-standing expertise in managing research networks (e.g. PSYSCAN, HARMONY, [Table 2](#)) and experimental therapeutics (STEP, CANTOP-RCT, [Table 2](#)). This Department (through PFP) coordinates the ECNP PMD-MHP Network, organising the meetings and the events.
 2. Brain and Behavioral Sciences Department, University of Pavia, Pavia, Italy. Member: PFP.
The Department of Brain and Behavioral Sciences hosts the first Italian clinical service for the detection and treatments of underage children and adolescents at clinical risk of developing psychosis ([Spada et al., 2016](#)). This Department is studying the neurodevelopmental processes that precede the onset of major psychiatric disorders in children, the clinical and neuropsychological characteristics of help-seeking adolescents at risk of mental disorders, neuropsychological and brain imaging markers for the transition to psychosis and experimental therapeutics (e.g. FACT trial, [Table 2](#)).
 3. Hospital General Universitario Gregorio Marañón de Madrid, Centro de Investigación Biomedica en Red de Salud Mental, CIBERSAM. Member: CA.
CIBERSAM's main objective is carrying out excellence translational research helping to prevent mental disorders and thus provide a better quality of life for the general population as well as better treatments for those with psychiatric disorders ([Salagre et al., 2019](#)). The Department of Child and Adolescent Psychiatry at Hospital Gregorio Marañón has a long tradition in longitudinal studies with early first episode patients and children and adolescents at high risk to develop psychosis.
 4. Basel Department of Psychiatry (UPK), University of Basel, Basel, Switzerland. Member: SB.
This Department runs one of the first clinical early recognition services in Europe, established in 1999. This Basel Early Treatment program covers a catchment area of 500.000 including adolescents and adults. This Department has longstanding expertise in studying the neurobiological correlates of emerging mental disorders, using modern neuroscientific methods such as structural, functional and multimodal neuroimaging.
- This Department also has a track record in early intervention and exploring preventive and experimental therapeutics (nutrients, LSD, microbiota), and experimental therapeutics (LSD, microbiota) and in managing international studies (e.g. PRONIA, EU-GEI, HARMONY, SYNCHIZ).
5. Department of Psychiatry and Psychotherapy, University of Lübeck. Member: SB
This Department runs a newly established Translational Psychiatry Unit (TPU) focusing on the development of preventive methods and novel therapeutic tools to target psychiatric disturbances as early as possible in life. By having an early intervention clinical service for adolescents and adults with non-affective and affective psychotic symptoms along with corresponding research groups utilizing a range of methods from neuroimaging, genetics, psychological, molecular and human experimental medicine, preventive strategies will be utilized into clinical practice. This Department covers a mainly rural catchment area of about 2 million people across the region of northern Germany.
 6. Department of Psychiatry and Psychotherapy, Ludwig-Maximilian-University, Munich, Germany. Member: NL.
This Department hosts a clinical service for the detection of emerging mental disorders in children and adolescents. From a research perspective, this Department leads the field of predictive analytics by using neurobiological and behavioural data to improve treatment of emerging mental disorders. The additional expertise of this Department includes precision psychiatry and individualised stratification of risk for poor disease outcomes, and an improved understanding of the diagnostic boundaries between and within disease entities. This Department is leading or participating in international studies in this field (e.g. PRONIA, HARMONY).
 7. Department of Psychiatry, Warneford Hospital, University of Oxford, Oxford. Member BL.
This Department explores the neuro-immunological basis of emerging mental disorder, in particular, the prevalence of antibodies against the NMDA receptor, and other neuronal targets, in people with early psychosis. This Department collaborates with academic groups and clinicians internationally to advance our understanding of emerging mental disorders and to treat patients with the best evidence-based treatments.
 8. Department of Psychiatry, Amsterdam University Medical centers (location AMC), Amsterdam, Netherlands. Member: DN.
This Department is particularly experienced in investigating transdiagnostic biomarkers that may indicate a risk of developing severe mental disorders in adolescents and young adults. One of the topics is the use of neurophysiological methods for stratification medicine and refinement of risk prediction. Additionally, the Department conducts research in the use of eHealth approaches (ENYOY, [Table 2](#)) to help young people at risk for severe mental illness.
 9. Central Institute of Mental Health in Mannheim, Mannheim, Germany. Member: AML.
The Central Institute of Mental Health is the largest psychiatric research institute in Germany. Its Department of Psychiatry and Psychotherapy has a longstanding

Table 2 Current portfolio of research programmes funded in the field of prevention of mental disorders or mental health promotion in the ECNP PMD-MHP Network.

Research programme		Funder	Amount	Period	ECNP PMD-MHP Network site	Topic
PRONIA	Personalised Prognostic Tools for Early Psychosis Management	EU-FP7	Eur 6000000	2014-2019	Munich, Basel	Development of a personalised tool to predict outcomes in patients at risk of psychosis
PSYSCAN	Translating neuroimaging findings from research into clinical practice	EU-FP7	Eur 6000000	2014-2020	London	Development of a personalised tool to predict outcomes in patients at risk of psychosis
STEP	Stratification & Treatment in Early Psychosis	Wellcome Trust	GBP 15000000	2020-2025	London	Precision psychiatry and therapeutics for emerging psychosis
SYNSCHIZ	Linking synaptic dysfunction to disease mechanisms in schizophrenia - a multi-level investigation	NEURON-ERA-NET	EUR 1733366	2018-2021	Basel	Translational approaches in disease development
HARMONY	Harmonization of At Risk Multisite Observational Networks for Youth	NIMH	US Dollars 750000	2015-2020	Munich, London, Basel	Standardisation of prediction algorithms across existing research consortia in emerging psychosis
CANTOP-RCT	CANnabidiol as a Treatment for Psychosis clinical high-risk state- a Randomised Clinical Trial	NIHR	GBP 1854492	2019-2024	London	Experimental therapeutics for the prevention of psychosis
IMAGEMEND	IMAGing GENetics for MENTAL Disorders	EU-FP7	Eur 6000000	2013-2019	Mannheim	Development of transdiagnostic tools combining imaging genetics and clinical course to predict clinical course
FACT	Fluoxetine vs Aripiprazole Comparative Trial	Local funding	Eur 65000	2015-2024	Berlin, Pavia	Experimental therapeutics for the prevention of psychosis and improvement of outcome
ENYOY	ENgage YOung people early	ZonMw	Eur 460656	2018-2022	Amsterdam	Early engagement of young people with eHealth approaches to prevent severe mental illness
EPI_young	Epigenome dysregulation in link with substance use and mental health in young people	Ministry of Research grant	Eur 350000	2017-2021	Paris	Epigenetic modulation of mental health problems in young people
FOOD4THOUGHT	Dietary patterns in prevention and treatment of mental disorders	ZonMw	Eur 50000	2017-2019	Maastricht	Impact of food/diet in the prevention/treatment of mental disorders
@ease	Youth mental health reform by improving access to care	Innovation Fund/ Municipalities	Eur 500000	2017-2020	Maastricht, Amsterdam	Implementation of anonymous intervention for youth 12-25 with mental health needs

(continued on next page)

Table 2 (continued)

Research programme		Funder	Amount	Period	ECNP PMD-MHP Network site	Topic
SELFIE	Early transdiagnostic self-management intervention in youth	ZonMw	Eur 400000	2018-2022	Maastricht	Ecological momentary intervention in youth 12-25
STAR-T	Stress in at-risk mental state: efficacy of stress management cognitive behavioural therapy: a randomized controlled trial	Ministry of health	Eur 568000	2014-2019	Paris	Experimental trial for the prevention of psychosis and epigenetic changes related to psychosis conversion
EDIPAJ	Efficiency of early intervention services on access to care in young patients with early psychosis	Ministry of health	Eur 673600	2019-2022	Paris	Implementation of EIS and Cost efficiency study
SCOPe	Self-administered COgnitive Personalized training in early psychosis: a randomized controlled trial in adolescents and young adults	Ministry of health	Eur 720600	2019-2023	Paris	Implementation of e-Health approaches for emerging mental disorders
REDRESS	Early Prediction of non-response to Antidepressant therapy via a mobile digital scale	Ad Scientiam	Eur 600000	2018-2020	Paris	Implementation of e-Health approaches for emerging mental disorders

scientific reputation for the study of environmental and genetic indicators of emerging mental illness using a combination of neuroscientific methods with ecological momentary assessment, and the neural mechanisms of complex social behaviour in children and adolescents (IMAGEMEND). It coordinates the ESPRIT consortium, which aims at prevention in a clinical high-risk population and has worked on mechanisms underlying common societal risk context such as urban living. The long-term goal of this research programme is to move these mechanistic insights into the development of novel treatments for the prevention of mental disorders.

10. Center for Psychiatric Neuroscience, Department of Psychiatry, University Hospital Center and University of Lausanne, Prilly-Lausanne, Switzerland. Member: KQD. The Center for Psychiatric Neuroscience aims at bridging basic neuroscience and emerging mental disorders. The work conducted at this centre showed that oxidative stress/redox dysregulation may represent a "hub" on which both genetic and environmental risk factors converge during neurodevelopment, leading to the impairment of neural connectivity and synchronization, and the emergence of mental disorders. Current research studies conducted in this environment are investigating biomarkers for early detection and developing innovative therapeutics to impact the development of emerging mental disorders.
11. INSERM, Laboratoire de Physiopathologie des Maladies Psychiatriques, Centre de Psychiatrie et Neurosciences, Université Paris Descartes, Paris, France. Member: MOK. INSERM's expertise focuses on the identification of developmental forms of emerging mental disorders and on exploring the interaction between substance abuse and emerging mental disorders (EPI_young, Table 2). Cur-

rent lines of research involve the assessment of new endophenotypic markers for stratifying individuals at risk for psychosis and epigenetic changes associated to psychosis onset (REDRESS, STAR-T, EDIPAJ, SCOPe Table 2).

12. Department of Psychiatry and Psychology, Maastricht University, Maastricht, The Netherlands. Member: TVA. The Department of Psychiatry and Psychology employs neuroscientific methods to investigate the fragile transitional phases from childhood to adulthood. Besides, this centre adopts a transdiagnostic approach to investigate novel treatments and biomarkers across different types of emerging mental disorders (FOOD4THOUGHT, SELFIE). In addition, the department is leading or participating in large international studies in populations at high risk for psychosis (PSYSCAN, HARMONY). Moreover, the department is leading in national youth mental health reform and opened the first @ease center (www.ease.nl), the Dutch version of the Australian Headspace.
13. Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, Charité Universitätsmedizin, Berlin, Germany. Member: CC. The Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, Charité Universitätsmedizin, Berlin, Germany has one specific focus on the early identification, prevention and intervention of youth and young adults at-risk for the development of psychosis and affective disorders. As part of a collaborative service between the child and adolescent and adult psychiatry departments at the Charité Berlin, early detection, prognostic assessment and preventive treatment for individuals aged 12-25 is provided who are at risk of developing non-affective or affective psychosis is provided. Spanning a network of different University and non-University child and adolescent and adult

psychiatry departments, covering a combined catchment area of about 2.0 million people, the department is engaged in high-risk and prevention research across the region of greater Berlin region (e.g., FACT, Table 2).

14. Department of Psychiatry, Psychotherapy and Psychosomatic Medicine with Early Intervention and Recognition Centre (FRITZ), Vivantes Klinikum Am Urban and Vivantes Klinikum im Friedrichshain, Charité-Universitätsmedizin, Berlin, Germany: Member: AB.

The Department of Psychiatry, Psychotherapy and Psychosomatic Medicine has a longstanding expertise in studying psychosocial interventions in emerging mental disorders and in exploring psychopathological and psychosocial predictors of illness onset. Together with the Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy at Charité Universitätsmedizin, the department is spanning a network of child and adolescent and adult psychiatry departments focussing on high-risk and prevention research across the region of Berlin. Besides this, the centre adopts a transdiagnostic approach to investigate the course of emerging mental disorders.

15. Department of Psychiatry, University of Campania Luigi Vanvitelli, Naples, Italy. Member: SG

The Department has two inpatient wards, several outpatient facilities, a rehabilitation centre, a biochemical lab, a genetic lab, an electrophysiology lab and a neuropsychology lab. A unit of the outpatient facilities is dedicated to screening, recruitment and assessment of patients at risk of psychosis or with first episode psychosis. Facilities are available for early intervention, including psychotherapy, cognitive training and psychosocial treatments. The unit has gained a wide experience in research in the field, due to the participation in international investigations involving these patient populations (PSYSCAN). Moreover, it has well established clinical and research collaborations with a network of 13 Mental Health Departments located in the city of Naples and the Campania region, each of them with a catchment area ranging from 164,000 to 1000,000 inhabitants. Moreover, several departments in the area refer young undiagnosed subjects to our Department to assess risk for mental disorders. The Department also coordinates the activities of the Italian Network for Research on Psychoses, including 26 University Centers.

Furthermore, the ECNP PMD-MHD Network includes members and centres and therefore expertise and infrastructures- that are already participating in other established ECNP Networks as follows:

- Schizophrenia Network (SG, PFP, CA);
- Bipolar Disorder Network (MB, LVK, CC, AB, AP);
- Anxiety Disorders Research Network ADRN (KD);
- Preclinical Data Forum Network (MM);
- Obsessive Compulsive and Related Disorders Network OCRN (CA);
- Child and Adolescent Neuropsychopharmacology Network (CA, CC);
- Experimental Medicine Network (CA);
- Neuroimaging Network (NK, AML);

3.4. Collaboration with the pharmaceutical industry

A key remit of the ECNP PMD-MHP Network is to foster collaborative translational research with the industry in the field of prevention of mental disorders. Researchers from Lundbeck LTD (AW), Boehringer-Ingelheim (MS) and Servier (MJM) are part of the ECNP PMD-MHP Network. The geographical composition of the core ECNP PMD-MHP Network is detailed in Fig. 1 (with the exclusion of the Boehringer-Ingelheim member from the US).

4. Discussion

The ECNP PMD-MHP Network is the first European infrastructure which is specifically aiming at improving the prevention of mental disorders and mental health promotion. Such an ambitious goal will be achieved through an integrated approach. First, the ECNP PMD-MHP Network will facilitate the much-needed cross-fertilisation of transdisciplinary expertise across leading European institutions that is necessary to overcome current obstacles in this area. Ideally, cross-fertilisation would ultimately be expanded to efforts to improve mental health in the elderly and to prevent neurodegenerative disorders of ageing, such as dementia, which are characterized by disabling yet often neglected psychiatric symptoms like psychosis. The ECNP PMD-MHP Network's outstanding portfolio of European and international collaborations on the prediction of outcomes in young people with emerging mental disorders, promotion of good mental health or experimental preventive interventions demonstrates its capacity to cut across different sectors and disciplines of medical, neuroscientific and psychological knowledge. Such an approach aligns with other European initiatives such as the European Alliance Against Depression (<http://eaad.net>) which was established in 2008 by a number of mental health experts from different European research to improve care and optimise treatment for patients with depressive disorders and to prevent suicidal behaviour. Second, the ECNP PMD-MHP Network will enable data sharing opportunities and harmonisation of measurements, which are essential to advance knowledge at times of big-data research. This will be facilitated through specific scientific initiatives encompassing evidence synthesis approaches, use of data-sharing cloud system, development of specific grant applications, organisation of collaborative satellite symposia and events. Third, the combination of big data and multidisciplinary collaboration will, in turn, translate into large-scale grant applications to European funding bodies. The resulting research activities are likely to improve the quality, competitiveness and efficiency of European research in the field of prevention of mental disorders and promotion of mental health. Fourth, the ECNP PMD-MHP Network will play a pivotal role in disseminating the produced outputs through open-access scientific articles, workshops, seminars and symposia organised at European conferences. Particular attention will be placed on supporting young clinicians and researchers with interest in the prevention of mental disorders and mental health promotion. Fifth, the ECNP PMD-MHP Network will liaise with national stakeholders and national policymakers to support the local

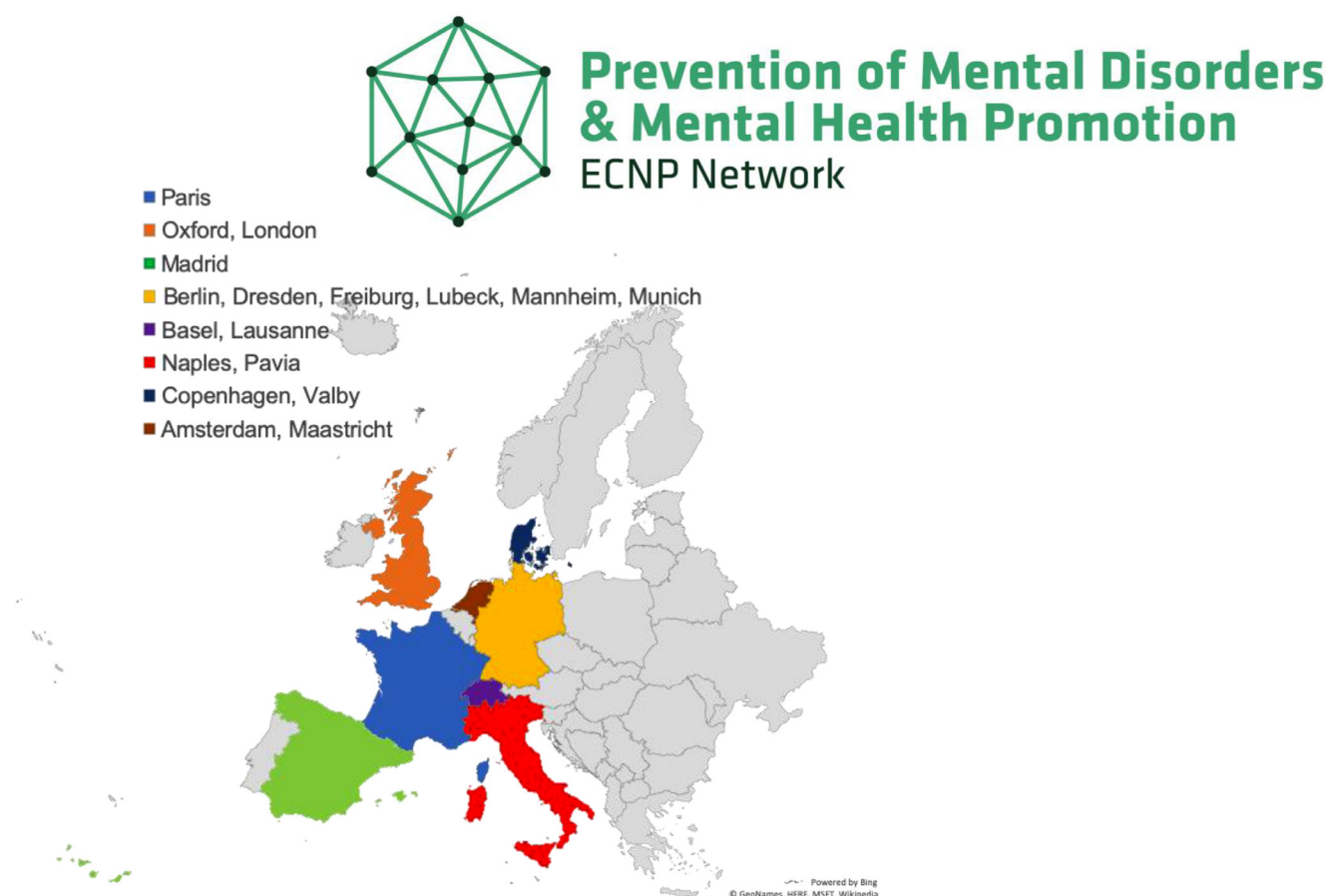


Fig. 1 ECNP network for the prevention of mental disorders and mental health promotion (<https://www.ecnp.eu/research-innovation/ECNP-networks/List-ECNP-Networks/Prevention-mental-disorders-and-mental-health-promotion-TWG>).

implementation of evidence-based, preventive policies and efforts to promote good mental health.

Overall, these efforts are expected to blend into a new research culture that is sensitive to the prevention of mental disorders and mental health promotion, for the ultimate benefits of European citizens that may experience some frailty in their mental health.

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Declaration of Competing Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. General sources of potential conflict of interest, considered unrelated to this work include the following: CC has been a consultant and/or advisor to or has received honoraria from: Alkermes, Allergan, Angelini, Boehringer-Ingelheim, Gedeon Richter, Gerson Lehrman Group, Indivior, IntraCellular Therapies, Janssen/J&J, LB Pharma,

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CRediT authorship contribution statement

Paolo Fusar-Poli: Conceptualization, Funding acquisition, Investigation, Project administration, Writing - original draft, Validation. **Michael Bauer:** Writing - review & editing, Conceptualization, Validation. **Andreas Bechdorf:**

Writing - review & editing, Conceptualization, Validation. **Christoph U. Correll**: Writing - review & editing, Conceptualization, Validation. **Kim Q. Do**: Writing - review & editing, Conceptualization, Validation. **Katharina Domschke**: Writing - review & editing, Conceptualization, Validation. **Silvana Galderisi**: Writing - review & editing, Conceptualization, Validation. **Lars Vedel Kessing**: Writing - review & editing, Conceptualization, Validation. **Nikolaos Koutsouleris**: Writing - review & editing, Conceptualization, Validation. **Marie-Odile Krebs**: Writing - review & editing, Conceptualization, Validation. **Belinda Lennox**: Writing - review & editing, Conceptualization, Validation. **Philip McGuire**: Writing - review & editing, Conceptualization, Validation. **Andreas Meyer-Lindenberg**: Writing - review & editing, Conceptualization, Validation. **Mark J. Millan**: Writing - review & editing, Conceptualization, Validation. **Dorien Nieman**: Writing - review & editing, Conceptualization, Validation. **Andrea Pfennig**: Writing - review & editing, Conceptualization, Validation. **Michael Sand**: Writing - review & editing, Conceptualization, Validation. **Allan Whenert**: Writing - review & editing, Conceptualization, Validation. **Therese van Amelsvoort**: Writing - review & editing, Conceptualization, Validation. **Celso Arango**: Writing - original draft, Validation, Project administration, Funding acquisition.

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